



Appendix A

Tucson Area Additional Services Matrix

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Additional Service Programs

Program Name	Description	Staff Reqts.	Sells Service Unit							Pascua Yaqui	Tucson Indian Center	TOTAL
			Ajo/Why PSA	Westside	Santa Rosa	San Xavier	Sells	North PSA	Sells Service Unit Additive	Pascua Yaqui	Tucson Indian Center	
	2001 User Population		928	817	1,450	8,366	5,807	516	17,884	5,522	1,592	24,998
	2015 User Population		1,108	975	1,763	10,057	6,945	548	21,396	6,642	1,916	29,954

Diabetes

24% increase in prevalence by 2015*	1.24											
Innova Count of Diabetes Uniques by Dx (2001)		252	271	531	1,499	1,694	142	4,389	1,006	0		5,395
2001 Diabetes Patients from TAO				645	1,433	2,532		4,610	1,456			6,066
Resulting 2015 Diabetes Register		0	0	972	2,136	3,755	0	6,863	2,172	0		9,035

Diabetes Program	The Diabetes Program provides for the diabetic patient's education and case management and the prospective diabetic patient with preventive education and clinical screening. The program is supported clinically with pre-natal examinations and Podiatry care. Envisions a staff of 4 case managers, 2 clinical education staff and 1 help desk staff per 1000 diabetic patients. Prevalence in Navajo is 8% today; 8.3% for Aberdeen, 12.8% for Nashville.	Existing Staff	0.0	1.0	0.0	0.0	4.0	0.0	5.0	7.0	0.0	12.0
		Future Plan	2.0	4.0	6.8	14.9	19.3	1.0	48.0	16.0	2.0	66.0
		Modeled Number	0.0	0.0	6.8	14.9	26.3	0.0	48.0	15.2	0.0	63.2
	Innova Group Planning Number		2.0	4.0	6.8	14.9	19.3	1.0	48.0	16.0	2.0	66.0

Healthy O'odham Promotion Program (HOPP)	Supports tribal initiatives to provide services in promotion of healthy outcomes related to diabetes and wellness. This program is the TON equivalent of Outreach Diabetes and Wellness Center Programs. TON utilized 1 additional counselor per 250 increase in User Pop.	Existing Staff	0.0	2.0	1.0	0.0	3.0	0.0	6.0	PY & TIC do not use HOPP. See OR Diabetes & Wellness.		6.0
		Future Plan	1.0	1.0	2.0	10.0	5.0	2.0	21.0			21.0
		Modeled Number	1.0	2.0	3.0	7.0	10.4	1.0	24.4			24.4
	Innova Group Planning Number		1.0	1.0	2.0	10.0	5.0	2.0	21.0			21.0

Tobacco (Supported by Cardio Grant - diabetes focus)	Tobacco prevention and cessation services focus primarily on reducing incidents of youth use and possession as well as reducing exposure to second hand smoke. It also encourages tobacco cessation through education and public awareness events.	Existing Staff	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.0	3.0
		Future Plan	1.0	1.0	1.0	1.0	1.0	1.0	6.0	2.0	3.0	11.0
		Modeled Number							0.0			0.0
	Innova Group Planning Number		1.0	1.0	1.0	1.0	1.0	1.0	6.0	2.0	3.0	11.0

Outreach Diabetes	Outreach Diabetes program promotes proper exercise and nutrition leading to a healthy lifestyle for Native Americans through community outreach, transportation support, community/school screenings, exercise passes/programs and nutrition classes. 1/328 expected diabetic patients	Existing Staff	HOPP will take the place of these programs for TON. For TIC and Pascua Yaqui, these programs will be utilized instead of HOPP.							0.0	1.0	1.0
		Future Plan								0.0	2.0	2.0
		Modeled Number								6.6	0.0	6.6
	Innova Group Planning Number									6.6	2.0	8.6

Wellness Center	Wellness Center provides fitness equipment, training, coaching and education for Native Americans of all ages, acting either as an independent service or in support or cooperation with such other programs as Elder Care, Diabetes, CHR's etc. It is for medically prescribed fitness training in support of the health care system. Its staffing is intended to support the medically needy and should not be adequate to operate the community gymnasium. In Navajo this was not part of the Diabetes program but in the HPDP program.	Existing Staff	HOPP will take the place of these programs for TON. For TIC and Pascua Yaqui, these programs will be utilized instead of HOPP.							0.0	2.5	2.5
		Future Plan								6.0	3.0	9.0
		Modeled Number								3.0	0.0	3.0
	Innova Group Planning Number									6.0	3.0	9.0

Case Management	Case Management provides professional staff dedicated to insuring a continuum of care and follow up for chronically ill or potentially chronically ill patients.	Existing Staff				0.0			0.0	0.0	0.0	0.0
		Future Plan	0.0	0.9	0.9	4.2	2.9	0.0	8.9	2.8	0.8	12.5
		Modeled Number	0.5	0.4	0.7	4.2	2.9	0.2	8.9	2.8	0.8	12.5
	Innova Group Planning Number		0.5	0.9	0.9	4.2	2.9	0.2	9.6	2.8	0.8	13.2

Total Diabetes Services Staffing	Existing Staff	0.0	3.0	1.0	0.0	7.0	0.0	11.0	8.0	5.5	24.5
	Future Staff	4.5	6.9	10.7	30.1	28.2	4.2	84.6	33.4	10.8	128.8
	% of Need	0.0%	43.5%	9.3%	0.0%	24.8%	0.0%	13.0%	23.9%	50.9%	19.0%

* Boyle, Hunnicutt, Narayan, et al.; Projection of Diabetes Burden Through 2050: Diabetes Care 24: 1936-1940, 2001



Additional Service Programs

			Sells Service Unit						Pascua Yaqui	Tucson Indian Center	TOTAL		
Program Name	Description	Staff Reqts.	Ajo/Why PSA	Westside	Santa Rosa	San Xavier	Sells	North PSA	Sells Service Unit Additive	Pascua Yaqui		Tucson Indian Center	
2001 User Population			928	817	1,450	8,366	5,807	516	17,884	5,522		1,592	24,998
2015 User Population			1,108	975	1,763	10,057	6,945	548	21,396	6,642		1,916	29,954

Substance Abuse

Innova Count of Unique Patients with SA dx (2001)	35	45	83	247	353	24	787	62	0	849
Ratio of Uniques to User Pop (2001)	27	18	17	34	16	22	134	89	0	223
Proj. Unique Patients w/ SA Dx year 2015 (1:40 "ASA Uniques" to User Pop)	28	24	44	251	174	14	535	166	48	1,005

Alcohol & Substance Abuse	Alcohol and Substance Abuse counseling. Nashville Model proposes 1 Unique per 40 User Pop. Tucson suggests 32 (some data questions). Case Management and Prevention - 25 Uniques per counselor.	Existing Counselors	0.0	2.0	0.4	2.5	2.0	0.0	6.9	18.0	1.0	25.9
		Future Plan	1.4	1.8	3.3	10.1	14.1	1.0	31.7	30.0	4.0	65.7
		Modeled Number	1.4	1.8	3.3	10.1	14.1	1.0	31.7	6.6	1.9	40.2
		Innova Group Planning Number	1.4	1.8	3.3	10.1	14.1	1.0	31.7	30.0	4.0	65.7

Acudetox	This service provides auricular acupuncture using the NASA 5 pt. protocol. Service is provided to patients with addictions, those in crisis as well as patients involved with the mental health system for whom it may be appropriate/beneficial.	Existing Staff			1.0	2.0	4.0		7.0	0.0	0.0	7.0
		Future Plan	1.0	1.0	3.0	3.0	5.0	1.0	14.0	0.0	2.0	16.0
		Modeled Number							0.0			0.0
		Innova Group Planning Number	1.0	1.0	3.0	3.0	5.0	1.0	14.0	0.0	2.0	16.0

Total Substance Abuse Staffing	Existing Staff	0.0	2.0	1.4	4.5	6.0	0.0	13.9	24.0	1.0	38.9
	Future Staff	2.9	3.3	6.8	13.6	19.6	2.5	48.7	36.0	6.0	90.7
	% of Need	0.0%	60.6%	20.5%	33.2%	30.6%	0.0%	28.6%	66.7%	16.7%	42.9%

Community Health Division

CHR	Community Health representatives inform community members about available health services, make referrals to appropriate agencies, and assist PHN staff with basic health care screening. Also participate in health promotion activities and health fairs.	Existing Staff	1.0	2.0	2.0	1.0	4.0	1.0	11.0	6.0	4.0	21.0
		Future Plan	2.0	3.0	3.0	3.0	5.0	2.0	18.0	8.0	8.0	34.0
		Modeled Number							0.0			0.0
		Innova Group Planning Number	2.0	3.0	3.0	3.0	5.0	2.0	18.0	8.0	8.0	34.0

WIC	WIC Program provides nutrition screening, nutrition education, supplemental food and referral to needed Community resources for pregnant, breastfeeding, postpartum women, infants and children <5 years of age who meet income guidelines (185% poverty) and are found to have a nutritional risk. Utilized 1/2000 (Navajo overall and lower than PY)	Existing Staff				0.038	5.0		5.0	4.0	0.0	9.0
		Future Plan	2.0	2.0	2.0	2.0	6.0	2.0	16.0	5.0	0.0	21.0
		Modeled Number		1.0	1.2	5.0	3.5		10.7			10.7
		Innova Group Planning Number	2.0	2.0	2.0	2.0	6.0	2.0	16.0	5.0	0.0	21.0

Maternal Child Health	Maternal and Child Health services exist to provide basic prenatal and childbirth education and support to Native American mothers. These services can include breastfeeding education/support, home visit evaluations for pre and post natal care, education on topics such as FAS/FAE, car seat use and safety, and nutrition. Utilized 1/2000 (Navajo overall and lower than PY)	Existing Staff				0.0			0.0	3.0	0.0	3.0
		Future Plan	0.5	0.5	0.5	0.5	0.5	0.5	3.0	5.0	0.0	8.0
		Modeled Number		1.0	1.2	5.0	3.5		10.7			10.7
		Innova Group Planning Number	0.5	0.5	0.5	0.5	0.5	0.5	3.0	5.0	0.0	8.0

Healthy Families	An extension of the care continuum stretching from WIC & Maternal Child Health, focused on enhancing the parent/child relationship while promoting child health and preventing child abuse and neglect. Utilized 1/2000 (Navajo overall and lower than PY)	Existing Staff				0.0			0.0	3.0	0.0	3.0
		Future Plan	0.5	0.5	0.5	0.5	0.5	0.5	3.0	5.0	0.0	8.0
		Modeled Number		1.0	1.2	5.0	3.5		10.7			10.7
		Innova Group Planning Number	0.5	0.5	0.5	0.5	0.5	0.5	3.0	5.0	0.0	8.0



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2001 User Population			928	817	1,450	8,366	5,807	516	17,884	5,522	1,592	
2015 User Population			1,108	975	1,763	10,057	6,945	548	21,396	6,642	1,916	29,954
Domestic Violence	Family Planning/Domestic Violence promotes Native American health through emphasizing benefits of family planning and supporting such emphases through education, appointment referrals for sterilization procedures, and pre-natal/post-natal home visits to discuss family planning needs; as well as lowering incidents of domestic violence through the provision of shelters/safe houses and/or referrals to other Domestic Violence assistance services.	Existing Staff				0.0			0.0	6.0	0.0	6.0
		Future Plan	0.5	0.5	0.5	0.5	0.5	0.5	3.0	6.0	0.0	9.0
		Modeled Number							0.0			0.0
	Innova Group Planning Number		0.5	0.5	0.5	0.5	0.5	0.5	3.0	6.0	0.0	9.0
Alternative Medicine	This service provides natural, traditional and chiropractic services to the community as well as educational services related to various health issues. It also seeks to alleviate concerns community members may have regarding unaddressed health issues.	Existing Staff				0.0			0.0	4.0	0.0	4.0
		Future Plan	0.5	0.5	0.5	0.5	0.5	0.5	3.0	7.0	0.0	10.0
		Modeled Number							0.0			0.0
	Innova Group Planning Number		0.5	0.5	0.5	0.5	0.5	0.5	3.0	7.0	0.0	10.0
HIV	The HIV Prevention Program coordinates all educational services for person who are at high risk for contracting the virus which causes HIV/AIDS.Casemanagement is also provided to those living with HIV/AIDS.	Existing Staff				0.0	2.0		2.0	2.0	0.0	4.0
		Future Plan	0.5	1.5	0.5	0.5	1.0	0.5	4.5	3.0	0.0	7.5
		Modeled Number							0.0			0.0
	Innova Group Planning Number		0.5	1.5	0.5	0.5	1.0	0.5	4.5	3.0	0.0	7.5
TB	The TB Program coordinates all services for persons who have or are at risk of having tuberculosis. Provides direct observed therapy, edicatopm . Contact investigation and collobrates TB patient serices with the Sells Service Unit. TB clinicians, ADHS, and surrounding counties.	Existing Staff				0.0			0.0	0.0	0.0	0.0
		Future Plan	0.5	1.5	0.5	0.5	0.5	0.5	4.0	0.0	0.0	4.0
		Modeled Number							0.0			0.0
	Innova Group Planning Number		0.5	1.5	0.5	0.5	0.5	0.5	4.0	0.0	0.0	4.0
Dialysis Support	Patient advocacy, translation services, nutrition counseling, education and treatment coordination in support of Dialysis Services.	Existing Staff				0.0	2.0		2.0	0.0	0.0	2.0
		Future Plan	2.0	2.0	2.0	2.0	2.0	2.0	12.0	1.0	0.0	13.0
		Modeled Number							0.0			0.0
	Innova Group Planning Number		2.0	2.0	2.0	2.0	2.0	2.0	12.0	1.0	0.0	13.0
Total Community Health Staffing		Existing Staff	1.0	2.0	2.0	1.0	13.0	1.0	20.0	28.0	4.0	52.0
		Future Staff	9.0	12.0	10.0	10.0	16.5	9.0	66.5	40.0	8.0	114.5
		% of Need	11.1%	16.7%	20.0%	10.4%	78.8%	11.1%	30.1%	70.0%	50.0%	45.4%
Elder Care Services												
Elder Care / Senior Services	Elder Care provides an open and supportive environment as well as an outreach program for the community's elders. Lunch distribution, social functions, health education and health benefit counseling is provided by the staff. TON utilized 1 FTE/343 users as a ratio (except SX).	Existing FTE				2.0	25.0		27.0	0.0	0.0	27.0
		Future Plan	3.0	3.0	6.0	15.0	20.0	2.0	49.0	2.0	0.0	51.0
		Modeled Number							0.0			0.0
	Innova Group Planning Number		3.0	3.0	6.0	15.0	20.0	2.0	49.0	2.0	0.0	51.0



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Supporting Programs

Emergency Medical Services (EMS)	Emergency Medical Services provide emergency medical services within the boundaries of a service unit. Ambulances are available twenty-four hours a day seven days a week, staffed with State Certified EMT, IEMT and Paramedics.	Location No. 1											
		Existing # of Staff					0.0	19.0		19.0	0.0	0.0	19.0
		Future # of Staff					0.0	47.0		47.0	0.0	0.0	47.0
		Existing # of Ambulances					0.0	4.0		4.0	0.0	0.0	4.0
		Future # of Ambulances					0.0	6.0		6.0	0.0	0.0	6.0
		Total											
		Existing # of Staff	0.0	0.0	0.0	0.0	19.0	0.0	19.0	0.0	0.0	19.0	
		Future # of Staff	0.0	0.0	0.0	0.0	47.0	0.0	47.0	0.0	0.0	47.0	
	Existing # of Ambulances	0.0	0.0	0.0	0.0	4.0	0.0	4.0	0.0	0.0	4.0		
	Future # of Ambulances	0.0	0.0	0.0	0.0	6.0	0.0	6.0	0.0	0.0	6.0		
Security	Security is responsible for the safety and well being of hospital patients, visitors, and personnel. It includes physical security of parking lots, surrounding grounds, and interiors of the facility.	Existing Staff				2.0	7.0		9.0	1.0	0.0	10.0	
		Future Plan	1.8	5.0	1.8	1.8	5.0	1.8	17.2	5.0	1.0	23.2	
		Modeled Number							0.0			0.0	
	Innova Group Planning Number		1.8	5.0	1.8	1.8	5.0	1.8	17.2	5.0	1.0	23.2	
Bio-Terrorism	The bioterrorism position once selected, is responsible for coordination and planning of emergency response activities, including emerging infectious diseases, healthcare security systems and associated policy development for the Tucson Area and all service areas within the Tucson Area. In the case of the Tohono O'odham Nation, planning efforts also include the State of Sonora, Mexico.	Existing Staff							0.0	0.0	0.0	0.0	
		Future Plan	0.5	0.5	0.5	0.5	1.5	0.5	4.0	0.0	0.0	4.0	
		Modeled Number							0.0			0.0	
		Innova Group Planning Number		0.5	0.5	0.5	0.5	1.5	0.5	4.0	0.0	0.0	4.0
Transportation	Transportation Department transports community residents to health related facilities within the service unit, and surrounding cities. It includes all the expenses incurred for automotive operation and maintenance and the administration of garage and dispatching activities in support of the medical mission.	Existing Staff	7.0	0.0	2.0	7.0	39.0	0.0	55.0	8.0	1.0	64.0	
		Future Plan	13.0	14.0	11.0	11.0	30.0	0.0	79.0	7.0	2.0	88.0	
		Modeled Number						0.8	0.8			0.8	
		Innova Group Planning Number		13.0	14.0	11.0	11.0	30.0	0.8	79.8	7.0	2.0	88.8
Tribal Health Administration	Tribal Health Administration Department oversees and ensures quality health services for service unit residents, while encouraging more self-reliance and personal control over their health and quality of life.	Existing Staff	0.0	0.0	0.0	0.0	4.0	0.0	4.0	0.0	0.0	4.0	
		Future Plan	1.0	1.0	1.0	1.0	4.0	1.0	9.0	0.0	0.0	9.0	
		Modeled Number							0.0			0.0	
		Innova Group Planning Number		1.0	1.0	1.0	1.0	4.0	1.0	9.0	0.0	0.0	9.0
Total Supporting Services Staffing			Existing Staff	7.0	0.0	2.0	9.0	69.0	0.0	87.0	9.0	1.0	97.0
			Future Staff	16.3	20.5	14.3	14.3	87.5	4.1	157.0	12.0	3.0	172.0
			% of Need	42.9%	0.0%	14.0%	62.9%	78.9%	0.0%	55.4%	75.0%	33.3%	56.4%
Total Additional Services Staffing			Existing Staff	8.0	7.0	6.4	16.5	120.0	1.0	158.9	69.0	11.5	239.4
			Future Staff	35.7	45.7	47.8	83.0	171.8	21.8	405.7	123.4	27.8	557.0
			% of Need	22.4%	15.3%	13.4%	19.9%	69.8%	4.6%	39.2%	55.9%	41.4%	43.0%



Appendix B

Tucson Area Productivity Benchmarks

Intentionally Blank



Key Characteristics

Key Characteristics (KC) are typically the most expensive element within any discipline of care. This table identifies KCs for each discipline as well as the capacity (or productivity benchmark) for each KC.

Discipline	Direct Health Care		
	Workload Units	Key Characteristics (KC)	KC Capacity
Primary Care			
Family Practice	Visits	Providers	4,512
		Provider Offices	1 per provider
		Exam Rooms	2 per provider
Internal Medicine	Visits	Providers	3,708
		Provider Offices	1 per provider
		Exam Rooms	2 per provider in clinic
Pediatric	Visits	Providers	4,512
		Provider Offices	1 per provider
		Exam Rooms	2 per provider in clinic
Ob/Gyn	Visits	Providers	3,068
		Provider Offices	1 per provider
		Exam Rooms	2 per provider in clinic
Primary Care Total	Visits	Providers	4,200
		Nursing Support	1.5 per provider
		Provider Offices	1 per provider
		Exam Rooms	2 per provider
Emergency Care			
Emergency	Visits	ER Providers	4,032
		Patient Spaces	1,938
Urgent Care	Visits	Providers	4,800
		Provider Offices	1 per provider
		Exam Rooms	6,400
Emergency Care Total	Visits	ER Providers	if <3000 visits then 1, if 3000-9999 then 2.7, if greater than 9999 visits then visits/3101
		RNs	if <3000 visits then 5.4, if 3000-5440 then 6.3, if greater than 5440 then 9.93 or visits/1501, whichever is greater
		Patient Spaces	1,938
Specialty Care			
Orthopedics	Visits	Providers	2,707
		Provider Offices	1 per provider
		Exam Rooms	2 per provider in clinic - 60% of time in clinic
Ophthalmology	Visits	Providers	3,609
		Provider Offices	1 per provider
		Exam Rooms	2 per provider
Dermatology	Visits	Providers	4,060
		Provider Offices	1 per provider
		Exam Rooms	2 per provider in clinic - 80% of time in clinic
General Surgery	Visits	Providers	2,707
		Provider Offices	1 per provider
		Exam Rooms	2 per provider in clinic - 60% of time in clinic
Otolaryngology	Visits	Providers	2,707
		Provider Offices	1 per provider
		Exam Rooms	2 per provider in clinic - 80% of time in clinic
Cardiology	Visits	Providers	2,100
		Provider Offices	1 per provider
		Exam Rooms	2 per provider in clinic - 80% of time in clinic
Urology	Visits	Providers	2,707
		Provider Offices	1 per provider
		Exam Rooms	2 per provider in clinic - 70% of time in clinic
Neurology	Visits	Providers	1,900
		Provider Offices	1 per provider
		Exam Rooms	2 per provider in clinic - 80% of time in clinic



Key Characteristics

Key Characteristics (KC) are typically the most expensive element within any discipline of care. This table identifies KCs for each discipline as well as the capacity (or productivity benchmark) for each KC.

Discipline	Direct Health Care		
	Workload Units	Key Characteristics (KC)	KC Capacity
Other Subspecialties	Visits	Providers	1,900
		Provider Offices	1 per provider
		Exam Rooms	2 per provider in clinic - 80% of time in clinic
Nephrology	Visits	Providers	1,900
		Provider Offices	1 per provider
		Exam Rooms	2 per provider in clinic - 80% of time in clinic
Allergy	Visits	Providers	1,900
		Provider Offices	1 per provider
		Exam Rooms	2 per provider in clinic - 80% of time in clinic
Pulmonology	Visits	Providers	1,900
		Provider Offices	1 per provider
		Exam Rooms	2 per provider in clinic - 80% of time in clinic
Gerontology	Visits	Providers	1,900
		Provider Offices	1 per provider
		Exam Rooms	2 per provider in clinic - 80% of time in clinic
Gastroenterology	Visits	Providers	1,900
		Provider Offices	1 per provider
		Exam Rooms	2 per provider in clinic - 80% of time in clinic
Rheumatology	Visits	Providers	1,900
		Provider Offices	1 per provider
		Exam Rooms	2 per provider in clinic - 80% of time in clinic
Oncology	Visits	Providers	1,900
		Provider Offices	1 per provider
		Exam Rooms	2 per provider in clinic - 80% of time in clinic
Pediatric Subspecialties	Visits	Providers	1,900
		Provider Offices	1 per provider
		Exam Rooms	2 per provider in clinic - 80% of time in clinic
Pediatric-Genetics	Visits	Providers	1,900
		Provider Offices	1 per provider
		Exam Rooms	2 per provider in clinic - 80% of time in clinic
Traditional Healing	Visits	Providers	1,900
		Provider Offices	1 per provider
		Exam Rooms	2 per provider in clinic - 80% of time in clinic
Specialty Care Sub-Total	Visits	Exam Rooms	2,400
		Provider Offices	1 per 2 exam rooms
Total Providers	Visits	Providers	Totals from Above
		Provider Offices	
		Exam Rooms & Patient Spaces	

Other Ambulatory Care Services

Dental	Dental Service Minutes	Providers	167,184 DSM per Dentist
		Provider Offices	1 per provider
		Hygienist	.5 per provider
		Dental Chairs	2.5 per provider
Optometry	Visits	Optometrist	2,008
		Eye Lanes	2 per provider
		Offices	1 per provider
Podiatry	Visits	Podiatrists	2,707
		Podiatry Offices	1 per provider
		Exam Rooms	2 per provider in clinic - 60% of time in clinic
Dialysis Patients	Visits	Dialysis Stations	.31 station/patient in 45 hours/week operation
Audiology	Visits	Audiologists	2,008
		Audiologist Offices	1 per Audiologist
		Audiology Booths	1 per Audiologist



Key Characteristics

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Discipline	Direct Health Care		
	Workload Units	Key Characteristics (KC)	KC Capacity
Behavioral Health			
Mental Health	Visits	Counselors	If mental health population > 1000, then $((\text{mental health population} / 1000) * 0.50) + 0.040$ if not then 0
		Counselor Offices	
Psychiatry	Visits	Providers Provider Offices Exam Rooms	1,720 visits per year
Social Service	Visits	Counselors	(MSW Counselor inpatient only) If total ADPL <= 0, if not then $((\text{total ADPL} / 3) * 0.10) + (\text{social service staff})$ If social service population <= 1000 then 0, if not then $((\text{social service population} / 279) * 0.10) + (\text{clerical support})$ if social services population <= 1000 then 0, if not then $((\text{social services population} / 279) * 0.02)$
		Counselor Offices	
Domestic Violence	Interventions	Counselors Counselor Offices	
Alcohol & Substance Abuse	Visits	Counselors Counselor Offices	1,720 visits per year
Inpatient Care			
Labor & Delivery	Births	LDRs	.75 adpl + $(1.645 * \text{sqrt}(.75 \text{ adpl}))$
	Patient Days	Post Partum beds	
Obstetrics	Patient Days	# of Beds	
Neonatology	Patient Days	# of Bassinets	
Pediatric	Patient Days	# of Beds	adpl + $(1.645 * \text{sqrt}(\text{adpl}))$
Adult Medical Acute Care			
Cardiology		# of Beds	
Endocrinology		# of Beds	
Gastroenterology		# of Beds	
General Medicine		# of Beds	
Hematology		# of Beds	
Nephrology		# of Beds	
Neurology		# of Beds	
Oncology		# of Beds	
Pulmonary		# of Beds	
Rheumatology		# of Beds	
Unknown		# of Beds	
Medical Patient Day Total		# of Beds	
Adult Surgical Acute Care		# of Beds	
Dentistry		# of Beds	
Dermatology		# of Beds	
General Surgery		# of Beds	
Gynecology		# of Beds	
Neurosurgery		# of Beds	
Ophthalmology		# of Beds	
Orthopedics		# of Beds	
Otolaryngology		# of Beds	
Thoracic Surgery		# of Beds	
Urology		# of Beds	
Vascular Surgery		# of Beds	
Surgical Patient Day Total			



Key Characteristics

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Discipline	Direct Health Care		
	Workload Units	Key Characteristics (KC)	KC Capacity
Intensive Care Unit	Patient Days	# of beds	adpl + (1.645*sqrt(adpl))
Psychiatry	Patient Days	# of beds	adpl + (1.645*sqrt(adpl))
Substance Abuse	Patient Days		
Sub Acute / Transitional Care	Patient Days	# of beds	adpl + (1.645*sqrt(adpl))
Inpatient Care Totals			
Elder Care			
Nursing Home	Patient Beds	# of patient beds	65+ User Pop X .0181 X 110%
Assisted Living	Patient Beds	# of patient beds	65+ User Pop X .0231 x 110%
Hospice	Patient Beds	# of patient beds	65+ User Pop x .00136 + (<65 x .00006)
Elder Care Totals			
Ancillary Services			
Laboratory Services	Billable Tests	tech staff @ peak	9820 billable tests/peak hours per year
Clinical Lab	Billable Tests	tech staff @ peak	9820 billable tests/peak hours per year
Microbiology	Billable Tests	tech staff @ peak	9820 billable tests/peak hours per year
Blood Bank			
Anatomical Pathology	Billable Tests	tech staff @ peak	9820 billable tests/peak hours per year
Lab Totals			
Pharmacy	Scripts	Pharmacists	19,350 scripts per year
Acute Dialysis	Visits	# of beds	624 procedures per bed
Diagnostic Imaging			
Radiographic	Exams	Rooms	6,000
Ultrasound	Exams	Rooms	2,667
Mammography	Exams	Rooms	4,000
Fluoroscopy	Exams	Rooms	2,000
CT	Exams	Rooms	4,000
MRI	Exams	Rooms	4,000
Diagnostic Imaging Total			
Nuclear Medicine	Exams		
Rad. Oncology	Exams		
Chemotherapy	Exams		
Rehabilitation Services			
Physical Therapy	Visits		
Occupational Therapy	Visits		
Speech Therapy	Visits		
Rehab Total	Visits	Therapy FTE	1,790
Respiratory Therapy	Minutes	# of staff FTE	77,400
Cardiac Catheterization Cases	Cases	Rooms	1,200
Home Health Care	Minutes		
Outpatient Endoscopy	Cases	# of Minor Procedure rooms	1,600
Outpatient Surgery Cases			
Cardiovascular	Minutes		85
Digestive	Minutes		85
Endocrine	Minutes		85
ENT	Minutes		45
Gynecology	Minutes		30
Hemic and Lymphatic	Minutes		85
Integument	Minutes		30
Musculoskeletal	Minutes		70
Nervous	Minutes		70
Ocular	Minutes		45
Respiratory	Minutes		85
Urogenital	Minutes		60
OP Surgical Case Total	Cases	Outpatient ORs	1,400



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Discipline	Direct Health Care		
	Workload Units	Key Characteristics (KC)	KC Capacity
Inpatient Surgery Cases	Cases	Inpatient ORs # of Pre-Op Spaces # of PACU Spaces # of Phase II Spaces	1,000 1 per OR + Minor Rooms 1 per OR 1.5 per OR + Minor Rooms
Surgical Case Total			
Administrative Support			
Administration		# of FTE	(Executive Staff)((if the facility is a hospital or a health center then 4, if not then 0) + (if the facility is a health station or health center, then 0, if not (if the total staff (excluding the driver, executive staff, office services, financial management, staff health, and material management) < 250, then 0, if not then (total staff number (excluding the driver, executive staff, office services, financial management, staff health, and material management)-250)/250))+((if the facility is a health center or health station then 2, if not then 0) + (if the facility is not health center or health station, then 0, if not then (if the total staff count < than 100, then 0, if not then (total staff count (excluding the driver, executive staff, office services, financial management, staff health, and material management)-100)/(100*1)+(Administrative Support Staff)If the facility is a hospital or medical center, then 2, if not then 0)+(If the facility is not a hospital or medical center, then 1, if not then 0).
Information Management		# of FTE	1 + (if(PCPVs + total inpatient days) > 4400, then ((PCPVs+total inpatient days)/10000)*0.60) if not then 0)



Key Characteristics

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Discipline	Direct Health Care		
	Workload Units	Key Characteristics (KC)	KC Capacity
Health Information Management		# of FTE	(Medical Records technicians) (If the facility is a hospital or a health center, then the total patient days (general medicine, OB/GYN, surgery, peds, new born, ICU/CCU)/365), if not then 0)+((primary care provider visits/4550)*1)+(Medical Records Technician (CHA/P))(CHP Ambulatory Encounters / 40,000) *1+(PCC Supervisor)((PCC data entry personnel / 4) *1)+(PCC data entry personnel)if (or(the facility is a hospital, or medical center) the (O.P WKLDP10 +1.952 * inpatient population)/(if the facility is a health station or health center, then (O.P.WKLDP10 +1.92*Ambulatory Inpatient Population)/1600) if not then 0) + P 10= If the facility is a health center, then OPVs to H.C), if not then (if the facility is a hospital or health center, then OPVs to a hospital, if not (RRM calculation PCPVs /0.8) + (OPVs to hospital = If the facility is a hospital or medical center, then (RRM Calculation PCPVs * HOSP OPV FCTR)) + (OPVs to H.C = If the facility is a health center, then RRM calculation PCPVs * MMB OPV FCTV, if not then RRM calculation PCPVs /0.8) + (Coder) (if the facility is a hospital or medical c
Business Office		# of FTE	(Business Manager) (if the facility has outpatient visits then 1, if not then 0)+((Patient registration Tech) ((if inpatient admissions - override cell > inpatient admissions - calculated cell then inpatient admissions - override cell/2000) * 1) + (if outpatient visits > 20000 then (outpatient visits-20000)/(10000 * 0.5) if not, then 0) + (Benefit Coordinator) ((if outpatient visits more then 10000, then (outpatient - 10000 * 1) if not then 0)+(Billing Clerk) (if inpatient admissions-override cell > inpatient admissions-calculated cell), then (if inpatient admissions override cell < 0, then 0, if not then ((inpatient admissions override cell/2000)*1) if not (if inpatient admissions-calculated cell < 0 then 0, if not, then ((inpatient admissions calculated cell / 2000) * 1) + (if primary care provider visit > 10000, then ((primary care provider visit - 10000) / 10000) * 1, if not then 0)



Key Characteristics

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Discipline	Direct Health Care		
	Workload Units	Key Characteristics (KC)	KC Capacity
Contract Health		# of FTE	(CHS Staff) If number of CHS purchase orders < 100, then 0, if not then (number of CHS purchase orders/2000) *1)+(Utilization Review) ((CHS purchase orders/10000) * 1)+(CHS Manager) If (CHS purchase orders > 100 ,then 1 if not ,then 0)
Facility Support Services			
Durable Medical		# of FTE	
Clinical Engineering		# of FTE	0.5+(if the facility is a hospital or medical center, then 1 if not ,then 0)+(PCPVs/2500)*0.30)+(Total ADPL /50000) + ((OPVs/325000)*0.50)+(ER After hours PCPVs/85000)* 0.50) + ((dental population/10000000)*0.5)+(Projected # of deliveries/5000)*0.50)+(((IN.P. surgical cases+IN.P. GYN. Surgical cases)/5500)*0.5)+(Projected # of deliveries/5000)*0.50)+(((IN.P. surgical cases+IN.P. GYN. Surgical cases)/5500)*0.5)+(Total ADPL/10000)*0.50)+(PCPVs/65000*050)+(ER After hours PCPVs/17000)*0.50)+(dental population/2000000)*50*95)
Facility Management		# of FTE	0.5+(If the facility is a medical center or a hospital, then 2 if not ,then 0)+(New born ADPL/1*0.50)+ (if acres of ground <= 0, then calculated acres/7.5*1)+if (Total space - IN.P treatment space) <= 1500, then ((Total space -I N.P treatment IN.P treat treatment space)/16500), if not then ((total space-IN.P. treatment space)/13000)) + Quarters #
Central Sterile		# of FTE	(Central Supply Staff) *0.67 +(total nurse stations *0.67+(Medical Technician) If surgery days > 0, then 1 if not then 0
Dietary		# of FTE	(Registered Dietian) (If the facility is a hospital or medical center, then 1,if not then 0)+(Food Services Staff) If the facility is a hospital or medical center, then (if FAC INFO T43=1, then 0.345*OR cases, if not then 0.315*OR cases), if not (if OR cases are less or equal to 5, then 0, if not then (if FAC INFO T43=1then OR cases * 0.4 + 2, if not then 0.258 * OR cases +2)))
Property & Supply		# of FTE	(Total RRM staff/75)*1
Housekeeping & Linen		# of FTE	(If the facility is a health center or health station then 2, if not, then 0) + (If ADPL < 21, then ADPL/7), if not then (((total ADPL - 21)/10)+21/7) + (total space/10000)



Key Characteristics

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Discipline	Direct Health Care		
	Workload Units	Key Characteristics (KC)	KC Capacity
Preventative Care			
Health Promotion / Disease Prevention (Preventive Care)		# of FTE	
Public Health Nursing			(Public Health Nurse Manager) (If PHN population > 1250 then 1, if not, then 0) + (Public Health Nurse) $(1.38 + (\text{PHN population} / 1250)) + 0$ if (PHN Population < 1250, then 0, if not, then $((\# \text{ of weekly one hour PHN managed clinics} / 1) * 0.03) + ((\# \text{ of CHR's supervised} < 5, \text{ then } 0, \text{ if not then } ((\# \text{ of CHR's supervised} - 5) / 10) * 1) + (\text{Public Health Nurse - Home Health Care})$ if home health case = 1, $(0.2 * (\text{PHN pop.} / 1250))$ if not then 0) + (Public Health Nurse - School) (if PHN school = 3, then 0, if not, then $(0.07 * \text{PHN population} / 1250) + (\text{Clerical Support})$ $((0.2 * \text{PHN pop}) / 1250)$
Public Health Nutrition			(If Nutrition population < 1400, 0) if not then $((\text{Nutrition population} / 100) * 0.3) + 0.3$
Environmental Health			
Health Education			(If health education population < 2000, then 0) of not then (if health education population <= 400, then 1 if not, then $((\text{health education population} - 4000) / 4000) + 1$)
Case Management	Cases	# of FTE	1 per 2400 User Pop or 1 per 2 PC Providers
Epidemiology		# of FTE	



Appendix C

Tucson Area CHS Cost Calculations

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Appendix C - CHS Data and the CHS Multiplier

In the effort to predict the future burden of CHS costs on the Service Units in the Tucson Area, it is important to determine the past experience on a unit of service basis. This allows us to predict future CHS costs when these “unit of service” costs can be multiplied by the predicted new workloads for the expanded population. We are generally successful in finding reliable measures; but in some cases, variable definitions do not lend themselves to finding comparable measures across all Service Units. When we do not have reliable data defined uniformly across Service Units, we can still estimate the costs of these services by knowing what ratio they are to the whole of CHS expenses for the Area.

For example, we know that the Tucson Area, through their F.I., expended \$9,457,108 for the years 2000, 2001, & 2002. We have broken down that total, with the help of the Area CHS Office and the F.I., into defined amounts, allowing us to determine unit of service costs for most of the service lines identified on the Resource Allocation Section of the Master Plan Primary Service Area report. These are listed on the table below and total \$9,073,954. There are three categories where the information could not be defined in reliable numerators or denominators, so we could not separate out reliable unit of service costs. These categories total \$383,154. There was \$0 which could not be classified into the categories. There was also \$3,328,987 paid directly by the Area Office, rather than the F.I. The table below identifies each of these totals.

In order to calculate the future CHS demand, we determine what the ratio of the unmatched amounts, (Paid by F.I. not included in the Resource Allocation, Not Classified, and Paid by Area Office) are to the amount paid by the F.I. In the Tucson Area this ratio is 41%. We refer to this as the Area CHS Multiplier. We can then take the CHS estimate by service line, and apply the Area Multiplier, thereby predicting the total CHS burden for the year 2015.

Tucson Area 3 Year Total 3 Year Total CHS Expenditures

2000-2001-2002 Paid by F.I. - Used in Resource Allocation

Paid by F.I. - Used in Resource Allocation

Category	Payment
O/P Physician	\$2,591,969
Emergency Room	\$465,635
Audiology	\$225
Birth-Mom's Cost	\$58,688
Acute Care	\$3,323,616
Lab Billable Test-Specific	\$63,721
Lab Billable Test-Non-Specific	\$0
OP Medical Oncology	\$24,874
Dialysis	\$13,303
Rehabilitation	\$31,631
OP Cardiac Cath	\$8,651
Outpatient Surgery	\$430,337
Radiology	\$662,680
EMS Run/Transport	\$1,389,147
Mental Health Prof.	\$9,477

Categories From Resource Allocation Paid by F.I. - Used in Resource Allocation	Sub-Total	\$9,073,954
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Paid by F.I. - Not Used In Resource Allocation

Category	Payment
Podiatry	\$57,384
Optometry	\$0
Dental	\$325,770

Categories From Resource Allocation Paid by F.I.-Not Used In Resource Allocation	Sub-Total	\$383,154.00
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Paid by F.I.-Not in Detail Table	\$0
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Total Paid by F.I.	\$9,457,108
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Paid From Area Office - TON

Year	Payment
2000	
2001	
2002	
Sub-Total	\$3,328,987

Paid From Area Office - PY

Year	Payment
2000	
2001	
2002	
Sub-Total	\$0

Paid by F.I.-Not Used In Resource Allocation	\$383,154
Paid by F.I.-Not in Detail Table	\$0
Paid From Area Office - TON	\$3,328,987
Paid From Area Office - PY	\$0
Sub-Total	\$3,712,141

Paid by F.I.-Used in Resource Allocation	Sub-Total	\$9,073,954
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Total Paid by F.I. not used in Resource Allocation, plus Total Paid from Area Office, divided by Total Paid by F.I. Used in Resource Allocation [or... (Sub-Total 1/Sub-Total 2)]

Area CHS Multiplier 41%

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Appendix D

Tucson Area HFCM Database

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Service Area	Comparison				Facility Deficiency												Health Resources						Isolation Service		Facility Size						Composite Scoring Options									
	Option 1 Rank	Option 2 Rank	Option 3 Rank	Option 4 Rank	Age Facility	Age Factor (AF)	Deficiency Cost	Replacement Cost	CF	Existing Space	Option 1 - Required Space	Option 2 - Required Space	Condition Factor (CF)	Space Factor (SF)	AES - Adjusted Existing Score	Scoring Option 1 - (400 pts. Possible)	Scoring Option 2 - (400 pts. Possible)	FDI	Scoring Option 1 - (200 pts. Possible)	% of Pop. over 55	Composite Poverty Index	Poor Health Status Index	Scoring Option 2 - (200 pts. Possible)	Kilometers	Scoring (100 pts Possible)	2015 User Pop	Option 1 Calc	Facility Size Factor	Scoring Option 1 - (150 pts Possible)	Option 2 HSP	Facility Size Factor	Scoring Option 2 - (150 pts Possible)	Total Option 1 (850 pts. Possible) SR1+H1	Total Option 2 (850 pts. Possible) SR1+H2	Total Option 3 (850 pts. Possible) SR2+H1	Total Option 4 (850 pts. Possible) SR2+H2				
Sells Service Unit																																								
Ajo/Why Proposed PSA					1	1	1	1		0.0000		\$1,746.00	0.0000	0	1,086	1,124	0.0000	0.0000	0	400	400	49.4	-97	17.4%	29%	94%	94	116.0	100	1,108	1,086	1.0000	150	1,124	1.0000	150	553	744	553	744
North Proposed PSA					4	4	4	4		0.0000		\$1,782.00	0.0000	0	638	333	0.0000	0.0000	0	400	400	49.4	-97	11.9%	29%	94%	90	3.2	0	548	638	1.0000	150	333	1.0000	150	453	640	453	640
Santa Rosa Health Center					3	3	3	3	45	0.0125	\$220,967.58	\$1,746.00	0.3649	347	1,610	1,439	0.3649	0.3774	216	346	340	49.4	-97	12.8%	29%	94%	91	56.0	62	1,763	1,610	0.9754	146	1,439	0.9857	148	458	645	453	641
San Xavier Health Center					5	5	5	5	72	0.5000	\$1,676,562.58	\$1,746.00	0.1892	5,076	8,246	8,070	0.1892	0.6892	1,578	323	322	49.4	-97	24.2%	29%	94%	98	17.5	0	10,057	8,246	0.6039	91	8,070	0.6114	92	317	512	317	512
Sells Hospital					8	8	6	7	44	0.0125	\$2,518,218.23	\$1,746.00	0.1874	7,694	5,756	14,765	0.1874	0.1999	6,156	-28	233	49.4	-97	14.2%	29%	94%	91	0.0	0	6,945	5,756	0.7266	109	14,765	0.3249	49	-16	173	185	373
Pisinemo/Westside Health Center					2	2	2	2		0.0000	\$15,640.89	\$1,746.00	0.0850	105	980	1,152	0.0850	0.0850	96	361	367	49.4	-97	17.6%	29%	94%	94	79.8	89	975	980	1.0000	150	1,152	1.0000	150	503	693	508	699
Yaqui CHS																																								
Pascua Yaqui Health Center					7	7	8	8		0.0000		\$1,746.00	0.0000	2,895	5,514	5,050	0.0000	0.0000	2,895	190	171	66.6	-131	8.7%	27%	94%	86	22.0	0	6,642	5,514	0.7412	111	5,050	0.7690	115	170	388	155	373
Tucson Indian Center					6	6	7	6		0.0000		\$1,746.00	0.0000	889	1,733	1,369	0.0000	0.0000	889	195	140	66.6	-131	12.2%	27%	94%	89	3.1	0	1,916	1,733	0.9680	145	1,369	0.9899	148	209	429	158	378

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